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UNITED STATES PATENT AND TRADEMARK OFFICE

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10/078,723	02/19/2002	Scott P. Dubal	884.738US1	5435

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EXAMINER
WANG, ALBERT C

ART UNIT	PAPER NUMBER
2115	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/20/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _16 October 2006_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-6 and 21-25_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-6 and 21-25_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This Office action is responsive to the amendment filed 16 October 2006.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3.   Claims 1-6 and 21-27 are rejected under 35 U.S.C. 112, first paragraph, as failing

to comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had

possession of the claimed invention. Independent claims 1, 21 and 25 have the new

limitation "to decompress the compressed boot image into the storage device without

copying a content of the compressed boot image to the storage device before

decompressing the compressed boot image into the storage device." The specification

teaches decompressing the compressed boot image into a storage device such as RAM

(fig. 3, step 325; page 8, lines 15-18), but does not expressly teach whether or not the

compressed boot image is first copied into RAM before it is decompressed.

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.   Claims 25-27 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

Claim 25 recites the limitation "the storage device" in the last line. Claims 26

recites the limitation "a storage device" in line 2. There is insufficient antecedent basis

for these limitations in the claim. Claim 27 depends on claim 26.

Claim Rejections - 35 USC § 103

6.   The text of those sections of Title 35, U.S. Code not included in this action can be

found in a prior Office action.

7.   Claims 1-6 and 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Ken Yap, "Etherboot Developers Manual", v5.0.1, 4 May 2001 ("Yap"), in view of

Leung et al., U.S. Patent No. 6,282,647 ("Leung"), and Mahmoud, U.S. Patent No.

6,567,911.

As per claim 1, Yap teaches method comprising:

creating a compressed boot image from a boot image for a network adapter (sec.

3.2, applying compressor program to Etherboot image for network adapter); and

programming the compressed boot image and programming a decompressor into a

boot ROM of the network adapter (sec. 3.2, "Etherboot allows the code to be compressed

before loading into ROM", decompressing loader).

However, Yap does not expressly teach receiving the boot image for the network

adapter from a server via a network. Yap refers to the boot image as a form of BIOS

extension (sec. 3.1), which is commonly stored in an option ROM of an adapter card.

Leung teaches receiving an option ROM image from a server via a network (col. 7, lines

10-23) for the purpose of flashing the option ROM image into an option ROM of a host

adapter (fig. 3, using option ROM BIOS programming utility 140; fig. 5, steps 414-420;

col. 6, lines 7-18). Leung allows for "different types of host adapters" by implementing

them as PCI cards that connect to a PCI bus (col. 4, line 63 – col. 5, line 4). Network

adapters, otherwise referred as network interface cards or NICs, for PCI buses are well

known in the art. Yap teaches detecting whether or not an option ROM of a network

adapter, which may be a PCI card, contains boot code (sec. 3.1). Thus, at the time of the

invention, it would have been obvious to one of ordinary skill in the art that Yap's boot

image may be received via a network in the manner of Leung's option ROM image, as

Yap's boot image is a form of BIOS extension (Yap, sec. 3.1).

Yap teaches further that creating the compressed boot image is performed by a

utility program (sec. 3.2, compressor program). In order to be executed, Yap's utility

program is stored inherently in storage device (secs. 3.1 & 3.2, RAM). Leung teaches

that standard architecture has RAM located outside of adapter cards (fig. 1B). Leung

teaches a similar utility program (fig. 3, option ROM BIOS programming utility 140; fig.

5, steps 414-420; col. 5, lines 30-39, RAM 120; col. 6, lines 7-18).

Moreover, Yap does not appear to teach decompressing the compressed boot

image into the storage device without first copying a content of the compressed boot·

image to the storage device before decompressing the compressed boot image into the

storage device. Mahmoud teaches decompressing an option ROM boot image directly

into RAM without first loading the compressed boot image into RAM (figs. 2A & 2B,

step 216; col. 6, lines 38-53). At the time of the invention, it would have been obvious to

one of ordinary skill in the art that Yap may be modified to incorporate such "direct"

decompression. A motivation would have been to conserve memory resources during

boot up (Mahmoud, col. 3).

As per claim 2, Yap teaches programming a loader into a boot image (sec. 3.2).

As per claim 3, Mahmoud teaches a header of the boot ROM for identifying an

indication of a location of the decompressor within the boot ROM (col. 5, lines 15-52).

As per claim 4, Yap teaches programming a header into a boot image (sec. 3.2).

As per claim 5, Yap teaches identifying in the header that the boot image is

compressed (sec. 3.2).

As per claim 6, Yap teaches identifying in the header a location of the loader in

the boot ROM (sec. 3.2).

As per claim 21, Yap teaches an electronic device comprising:

a processor (sec. 3.1, CPU inherent in personal computer);

a network adapter comprising a boot ROM with a boot image (sec. 3.1, "When

network adaptors were made for the PC, it was a natural step to put ROMs on them that

could contact a server for network booting."); and

a storage device comprising a utility program that when executed on the processor

is to compress a boot image for the network adapter into a compressed boot image and

program the compressed boot image and a decompressor into **the** boot ROM of the

adapter (secs. 3.1 & 3.2, stored inherently in RAM in order to be executed; sec. 3.2,

compressor program),

However, while Yap teaches programming a compressed boot image into the boot

ROM of the adapter (sec. 3.2), Yap does not expressly teach the utility program for doing

so. Yap refers to the boot image as a form of BIOS extension (sec. 3.1), which is

commonly stored in an option ROM of an adapter card. Leung teaches a storage device

holding utility programs (col. 5, lines 30-39, RAM 120) and a utility program for flashing

an option image into an option ROM of an adapter (fig. 3, option ROM BIOS programming utility 140; fig. 5, steps 414-420; col. 6, lines 7-18).). Leung allows for "different types of host adapters" by implementing them as PCI cards that connect to a PCI bus (col. 4, line 63 – col. 5, line 4). Network adapters, otherwise referred as network interface cards or NICs, for PCI buses are well known in the art. Yap teaches detecting whether or not an option ROM of a network adapter, which may be a PCI card, contains boot code (sec. 3.1). At the time of the invention, it would have been obvious to one of ordinary skill in the art to that Leung's programming utility may be applied to Yap's boot image, as Yap's boot image is a form of BIOS extension (Yap, sec. 3.1).

Yap teaches further that creating the compressed boot image is performed by a utility program (sec. 3.2, compressor program). In order to be executed, Yap's utility program is stored inherently in storage device (secs. 3.1 & 3.2, RAM). Leung teaches that standard architecture has RAM located outside of adapter cards (fig. 1B). Leung teaches a similar utility program (fig. 3, option ROM BIOS programming utility 140; fig. 5, steps 414-420; col. 5, lines 30-39, RAM 120; col. 6, lines 7-18).

Moreover, Yap does not appear to teach decompressing the compressed boot image into the storage device without first copying a content of the compressed boot image to the storage device before decompressing the compressed boot image into the storage device. Mahmoud teaches decompressing an option ROM boot image directly into RAM without first loading the compressed boot image into RAM (figs. 2A & 2B, step 216; col. 6, lines 38-53). At the time of the invention, it would have been obvious to one of ordinary skill in the art that Yap may be modified to incorporate such "direct"

decompression. A motivation would have been to conserve memory resources during

boot up (Mahmoud, col. 3).

As per claim 22, Yap teaches programming a loader and decompressor into a boot

image (sec. 3.2).

As per claim 23, Yap teaches the boot image is further to boot an electronic

device (sec. 3.1).

As per claim 24, Yap teaches a BIOS to detect the boot ROM (sec. 3.1, main

BIOS).

As per claims 25-27, since Yap/Leung/Mahmoud teaches the method of claims 1-

6 and the device of claims 21-24, Yap/Leung/Mahmoud teaches the claimed method.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than

SIX MONTHS from the date of this final action.

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Albert Wang whose telephone number is 571-272-3669.

The examiner can normally be reached on M-F (9:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

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more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

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Customer Service Representative or access to the automated information system, call

800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AW

CHUN CAO
PRIMARY EXAMINER